

**Claims**

What is claimed is:

- 1 1. A method for testing circuit components comprising:
  - 2 moving a test stage under a first camera, wherein said test stage contains
  - 3 a test pedestal adapted to hold at least one test bar and at least one tray
  - 4 containing at least one test bar, each test bar containing at least one circuit
  - 5 component;
- 6 visually aligning, with said first camera, a pickup collet with a selected
- 7 one of said at least one test bar;
- 8 picking up said selected test bar with said pickup collet;
- 9 visually aligning, with said first camera, said test pedestal; and
- 10 positioning said selected test bar on said test pedestal;
- 11 moving said test stage under a second camera; and
- 12 visually aligning, with said second camera, said selected test bar with a
- 13 test site.

- 1 2. A method in accordance with claim 1, further comprising:
  - 2 visually aligning, with said second camera, a selected circuit component
  - 3 contained in said selected test bar with said test site; and
  - 4 testing said selected circuit component.
- 1 3. A method in accordance with claim 2 further comprising:
  - 2 subsequent to testing said selected circuit component, moving said test
  - 3 stage under said first camera;
  - 4 visually aligning, with said first camera, said test pedestal;

5 picking up the selected test bar with said pickup collet;

6 visually aligning, with said first camera, another one of said at least one  
7 tray with said pickup collet, said another one of the at least one tray being an  
8 output tray; and

9 positioning said selected test bar on said output tray.

1 4. A method in accordance with claim 1 further comprising:

2 positioning said pickup collet at a first collet position prior to moving  
3 said test stage under said first camera; and

4 positioning said pickup collet at a second collet position prior to picking  
5 up said selected test bar with said pickup collet and positioning said selected  
6 test bar on said test pedestal.

1 5. A method in accordance with claim 1, wherein the steps of moving the  
2 test stage comprise moving the test stage to predetermined coordinates, and the  
3 steps of visually aligning comprise processing a camera image.

1 6. A method in accordance with claim 1, wherein said circuit components  
2 comprise optical devices.

1 7. A method in accordance with claim 1, wherein said at least one test bar  
2 further comprises an identification code.

1 8. A method in accordance with claim 7 further comprising acquiring an  
2 image, with said first camera, of said identification code.

1 9. A test fixture for testing circuit components, said fixture comprising:

2 at least one test bar, each test bar containing a plurality of circuit  
3 components;

4 at least one tray, each tray containing a plurality of test bars;

5           a test pedestal adapted to hold at least one test bar;  
6           a transportable test stage comprising said at least one tray and said test  
7   pedestal, wherein said at least one tray and said test pedestal are in a fixed  
8   position with respect to said test stage;

9           a pickup collet for picking up and placing said at least one test bar;

10          a first camera for performing visual alignment with said pickup collet;  
11       and

12          a second camera for visually aligning said circuit component with a test  
13   site.

1   10.   A test fixture in accordance with claim 9, wherein said circuit  
2   components comprise optical devices.

1   11.   A test fixture in accordance with claim 10, wherein said optical devices  
2   comprise at least one of a laser diode and a wavelength division multiplexer.

1   12.   A test fixture in accordance with claim 9, wherein each circuit  
2   component comprises at least one test pad for making contact with test probes  
3   at said test site, the surface area of each test pad being approximately  $2.5 \times 10^{-3}$   
4   square inches.

1   13.   A test fixture in accordance with claim 9, wherein said plurality of test  
2   bars contained by each tray is held in place by a vacuum.

1   14.   A test fixture in accordance with claim 9, wherein said at least one test  
2   bar contained by said test pedestal is held in place by a vacuum.

1   15.   A test fixture in accordance with claim 9, wherein said plurality of  
2   circuit components contained by each test bar is held in place by a vacuum.

1   16.   A test fixture in accordance with claim 9, wherein said test bar is held in  
2   contact with said pickup collet by a vacuum.

1 17. A test fixture in accordance with claim 9, wherein said at least one test  
2 bar comprises an identification code.

1 18. A test fixture in accordance with claim 9, wherein said at least one tray  
2 is held in contact with said test stage by a vacuum.

1 19. A test fixture in accordance with claim 9, wherein the test stage is  
2 moved to predetermined coordinates, the pickup collet is aligned with the test  
3 pedestal and each tray by processing a camera image, and said test pedestal is  
4 aligned with said test site by processing a camera image.

1 20. A test fixture in accordance with claim 9, wherein said test site  
2 comprises at least one of a front light detector, a rear light detector, and a  
3 spectroscopic lens.

1 21. A test fixture in accordance with claim 9, wherein said test pedestal  
2 comprises a cooling device for maintaining a test bar placed on said test  
3 pedestal at an approximately constant temperature.

1 22. A test fixture in accordance with claim 21, wherein said temperature is  
2 25° Centigrade.